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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,512	01/14/2005	Takeo Komiya	50212-604	4391
20277	7590	02/09/2006	EXAMINER	
MCDERMOTT WILL & EMERY LLP			BLEVINS, JERRY M	
600 13TH STREET, N.W.			ART UNIT	
WASHINGTON, DC 20005-3096			PAPER NUMBER	
			2883	

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

57/

Office Action Summary	Application No. 10/501,512	Applicant(s) KOMIYA ET AL.	
	Examiner Jerry Martin Blevins	Art Unit 2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Examiner accepts applicant's amendment to the abstract. The objection to the abstract is withdrawn.

Applicant's arguments, see page 5, filed 11/02/2005, with respect to the rejection(s) of claim(s) 1 under 102(e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found art reference, US Patent to Toyama et al., number 6,061,487. See rejections under 103(a) section below for details.

Applicant's arguments, see page 7, filed 11/02/2005, with respect to the rejection(s) of claim(s) 4 and 8 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found art reference to Kukubo et al., number 4,797,895. See rejections under 103(a) section below for details.

Applicant's arguments, see pages 5 and 6, filed 11/02/2005, with respect to the rejection(s) of claim(s) 5 under 103(a) have been fully considered but they are not persuasive. Namely, US Pre Grant Publication to Takizawa et al., number 2001/0053260 teaches a reflection filter (page 4, paragraph 70) and an additional optical path changing means (inclined surface 12, Figure 1). Page 4, paragraphs 69

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and 70, clearly shows that the reflection filter and the optical path changing means are distinct entities, as Takizawa teaches that the inclined surface (optical path changing means) reflects light even without the reflection filter (paragraph 69), and that additionally a reflection filter may be employed (paragraph 70).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 2, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takizawa in view of Toyama.

Regarding claim 1, Takizawa teaches an optical waveguide module (Figures 1 and 2), comprising: an optical circuit (page 2, paragraph 33), constituted by a substrate (10) and an optical waveguide (20) formed on the substrate and having a groove (11), a reflection filter that is installed on the inside of the groove of the optical circuit including a portion where signal light transmitted through the optical waveguide passes through, and that reflects part of the signal light according to a specific reflectivity (page 4, paragraph 70), and a photodetector (30) that detects reflected light (90) of the signal light reflected by the reflection filter, wherein the photodetector is arranged such that the reflected light is made incident onto the light incident face thereof at a predetermined angle with respect thereto (Figure 1). Takizawa does not teach that the groove is formed at a predetermined inclination angle with respect to the vertical axis of the optical waveguide so as to cross a predetermined portion of the optical waveguide.

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Toyama teaches a groove formed at a predetermined inclination angle with respect to the vertical axis of an optical waveguide so as to cross a predetermined portion of the optical waveguide (Figure 14 and column 24, lines 17-28). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Takizawa with the groove of Toyama. The motivation would have been to reduce optical loss (column 24, lines 17-28).

Regarding claim 2, Takizawa in view of Toyama teaches the limitations of the base claim 1. Takizawa also teaches that the optical circuit is a planar optical waveguide type optical circuit including an optical waveguide of a planar optical waveguide type formed as the optical waveguide on the substrate (page 2, paragraph 34 and paragraph 95, pages 6 and 7).

Regarding claim 5, Takizawa in view of Toyama teaches the limitations of the base claim 1. Takizawa also teaches an optical path changing means (12) for changing the light path of the reflected light to a light path effecting incidence onto the light incident face of the photodetector at a predetermined angle with respect thereto (Figure 1 and paragraph 10, page 1). See details above in response to arguments section.

Claims 3, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takizawa in view of Toyama as applied to claims 1 and 5 above, and further in view of US Pre Grant Publication to Kimura, number 2002/0031307.

Regarding claim 3, Takizawa in view of Toyama teaches the limitations of the base claim 1. Takizawa does not teach that the optical circuit includes an optical fiber

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fixed as the optical waveguide on the substrate. Kimura teaches an optical circuit (Figure 4) including an optical fiber (50) fixed on a substrate (10). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the fiber of Kimura as the waveguide of Takizawa. The motivation would have been to reduce light guiding costs by using well-known light guiding equipment.

Regarding claim 6, Takizawa in view of Toyama teaches the limitations of the base claim 5. Takizawa also teaches that the optical path changing means is a reflection mirror (Figure 1). Takizawa does not teach a mounting member disposed on the top side of the optical circuit for mounting the photodetector on the photodetector mounting face thereof, wherein the optical path changing means is formed on a predetermined of the mounting member. Kimura teaches a mounting member disposed on the top side of the optical circuit for mounting a photodetector (Figure 4, element 40) on the photodetector mounting face thereof (page 2, paragraph 39) wherein an optical path changing means (Figure 8, element 63) is formed on a predetermined face of the mounting member (page 2, paragraph 39 and Figure 8). It would have been obvious to one of ordinary skill in the art at the time of the invention to mount the photodetector of Takizawa such that the optical path changing means is formed on a predetermined face of the mounting member, as taught by Kimura. The motivation would have been to improve optical alignment.

Regarding claim 7, Takizawa in view of Toyama and further in view of Kimura teaches the limitations of the base claim 6. Takizawa also teaches that the reflection mirror is a total reflection mirror (Figure 1).

Claims 4, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takizawa in view of Toyama as applied to claim 1 above, and further in view of Kukubo.

Regarding claim 4, Takizawa in view of Toyama teaches the limitations of the base claim 1. Takizawa also teaches that the reflected light is made incident onto the incident face of the photodetector at a predetermined angle (Figure 1). Takizawa does not teach a mounting member disposed on the top side of the optical circuit for mounting the photodetector on the photodetector mounting face thereof, wherein the mounting member is disposed with the photodetector mounting face being obliquely inclined at an angle with respect to the top surface of the optical circuit. Kukubo teaches a mounting member disposed on the top side of the optical circuit for mounting a photodetector (Figure 2, element 22) on the photodetector mounting face thereof wherein the mounting member is disposed with the photodetector mounting face being obliquely inclined with respect to the top surface of the optical circuit (Figure 2 and column 2, lines 41-54). It would have been obvious to one of ordinary skill in the art at the time of the invention to mount the photodetector of Takizawa at an obliquely inclined angle in a mounting member, as taught by Kukubo. The motivation would have been to improve optical alignment.

Regarding claim 8, Takizawa in view of Toyama teaches the limitations of the base claim 1. Takizawa also teaches that the reflected light is made incident onto the photodetector at a predetermined angle (Figure 1). Takizawa does not teach that the photodetector is mounted on the top surface of the optical circuit. Takizawa also does

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not teach that the photodetector is obliquely inclined at an angle with respect to the top surface of the optical circuit. Kukubo teaches a photodetector (Figure 2, element 22) mounted on the top surface of an optical circuit and that the light incident face of the photodetector is obliquely inclined at an angle with respect to the top surface of the optical circuit (Figure 2 and column 2, lines 41-54). It would have been obvious to one of ordinary skill in the art at the time of the invention to mount the photodetector of Takizawa at an obliquely inclined angle in a mounting member, as taught by Kukubo. The motivation would have been to improve optical alignment.

Regarding claim 9, Takizawa in view of Toyama and further in view of Kukubo teaches the limitations of the base claim 8. Takizawa also teaches that a light receiving portion of the photodetector is, viewed from the light path of the reflected light, disposed at a position opposite to the light incident face (page 6, paragraph 93).

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takizawa in view of Toyama as applied to claim 1 above, and further in view of US Patent to Shanley, number 6,477,285.

Regarding claim 10, Takizawa in view of Toyama teaches the limitations of the base claim 1. Takizawa does not teach plural optical waveguides as the optical waveguide and a photodetector array having plural photodetectors corresponding to the plural waveguides as the photodetector. Shanley teaches an optical circuit (Figure 25) comprising plural optical waveguides (1912) and a photodetector array having plural photodetectors (1914) corresponding to the plural waveguides. It would have been

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obvious to one of ordinary skill in the art at the time of the invention to include the plural waveguides and photodetectors of Shanley as the waveguide and photodetector of Takizawa. The motivation would have been to allow simultaneous communication of multiple signals.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takizawa in view of Toyama as applied to claim 1 above, and further in view of US Patent to Yamamoto et al., number 6,078,707.

Regarding claim 11, Takizawa in view of Toyama teaches the limitations of the base claim 1. Takizawa does not teach a coat film for preventing the reflection of the light within a predetermined wavelength band formed on the light incident face of the photodetector. Yamamoto teaches a photodetector (Figure 18a, element 120) wherein a coat film for preventing the reflection of the light within a predetermined wavelength band (25) is formed on the light incident face of the photodetector (Figure 18a and column 6, lines 41-57). It would have been obvious to one of ordinary skill in the art at the time of the invention to form a reflection preventative coat film, as taught by Yamamoto, on the photodetector of Takizawa. The motivation would have been to improve the filtering of the signal received by the photodetector.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry Martin Blevins whose telephone number is 571-272-8581. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMB



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